

## Earth's Materials and Changes

### 3-3 The student will demonstrate an understanding of Earth's composition and the changes that occur to the features of Earth's surface. (Earth Science)

#### 3.3.4 Infer ideas about Earth's early environments from fossils of plants and animals that lived long ago.

**Taxonomy level:** 2.5-B Understand Conceptual Knowledge

**Previous/Future knowledge:** Fossils and their relationship to the early environments of plants and animals is new material for 3<sup>rd</sup> grade. They will be studied further in 8<sup>th</sup> grade (8-2.2) when students will summarize how scientists study Earth's past environment and diverse life forms by examining different types of fossils (including molds, casts, petrified fossils, preserved and carbonized remains of plants and animals, and trace fossils) and in high school Earth Science.

**It is essential for students to** know that fossils can give information about what the environment was like in the location where the fossil was found. For example,

- Fossils of a water organism found in an area that is now mountains means that area was possibly once under water.
- Fossils of trees or tree parts that are found in a desert mean that area was possibly once a forest.
- Fossils of plants that are found in very cold areas of Earth means that area at one time possibly had a warmer climate.

Every time a new fossil is found, more information about life on Earth and the environment of Earth is discovered.

**It is not essential for students to** know any specific times of early Earth history like the Paleozoic Era or the Jurassic Period. The exact names of organisms that lived long ago might be an interesting discussion, but it is not necessary for this indicator.

#### **Assessment Guidelines:**

The objective of this indicator is to *infer* early Earth environments from fossil information; therefore, the primary focus of assessment should be to make a conclusion about the early environment in an area on the basis of the fossil organism. However, appropriate assessments should also require students to *compare* environments of early Earth with environments today; or *exemplify* organisms that might help determine an environment.